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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/736,956	12/15/2003	Dale R. Sogge	A42131	4460

7590 08/30/2005

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EXAMINER

WHITTINGTON, KENNETH

ART UNIT PAPER NUMBER

2862

DATE MAILED: 08/30/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 10/736,956	Applicant(s) SOGGE ET AL.	
	Examiner Kenneth J. Whittington	Art Unit 2862	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 14 July 2005.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1,2,8-12 and 15-17 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,8-11 and 15 is/are rejected.
- 7) ☒ Claim(s) 2,12,16 and 17 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.



**Bot Ledynh**  
Primary Examiner

#### Attachment(s)

- |   |  |
|---|--|
| <p>1) <input type="checkbox"/> Notice of References Cited (PTO-892)</p> <p>2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)</p> <p>3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br/>Paper No(s)/Mail Date _____.</p> | <p>4) <input type="checkbox"/> Interview Summary (PTO-413)<br/>Paper No(s)/Mail Date. _____.</p> <p>5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)</p> <p>6) <input type="checkbox"/> Other: _____.</p> |
|---|--|

**DETAILED ACTION**

The Amendment filed July 14, 2005 has been entered and considered. In view thereof, the objections to the Specification have been withdrawn.

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***Election/Restrictions***

Applicant's election with traverse of the requirement in the reply filed on July 14, 2005 is acknowledged. However, Applicant has not provided any grounds for the traversal. Accordingly, the requirement is still deemed proper and is therefore made FINAL.

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***Claim Rejections - 35 USC § 102***

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

18 Claims 1, 8 and 9 are rejected under 35 U.S.C. 102(b) as being anticipated by Striker (US 6,326,780). Regarding these claims, Striker discloses a method and apparatus for indicating the angular position of a rotatable member comprising:

at least one magnet mounted onto a member for rotation with respect to a stator assembly, the magnets diametrically opposed to each other and have reverse poles facing each other (See

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Striker FIG. 1, magnets 32 and 34, see also col. 3, lines 22-54).

the stator assembly comprising magnetic material (See FIG. 1, item 30) such that the strength of the magnetic field at a first position or air gap (position of GMR element 1 in FIG. 1) varies with the angular position of the stator with respect to the at least one magnet and a magnetic field at a second position or air gap (position of GMR element 5 in FIG. 1) is generally constant and independent of the angular position of the stator with respect to the at least one magnet and formed out of alignment with the magnets; and

a first and second magnetic sensor in each of the first and second locations respectively for measuring the magnetic field therein (See FIG. 1, GMR elements 1 and 5, which can also be Hall elements, see col. 2, line 57 to col. 3, line 7). It is noted that rotating the at least one magnet with respect to the stator at small angles as shown in FIG. 1 of Striker would mean that the sensor at position 1 would measure the rotation angle between them and the sensor at position 2 would have a generally constant magnetic flux, but would necessarily measure any change in the magnetic strength of the at least one magnet. Since the device of Striker has the recited structure, it performs the recited functions as well.

***Claim Rejections - 35 USC § 103***

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim 10 is rejected under 35 U.S.C. 103(a), as being  
6 unpatentable over Striker in view of Oudet et al. (US  
5,789,917). Regarding these claim, Striker teaches all the  
limitations of claim 8 (Note discussion above). However,  
Striker does not explicitly teach a coupling member being a  
tubular yoke of magnetic material. Oudet et al. teaches a pair  
of diametrically opposing arcuately shaped magnets having  
12 opposite poles facing each other (See Oudet et al. FIG. 1, item  
5 and col. 3, lines 20-25), the magnets being mounted into a  
tubular yoke which is made from soft magnetic material (See FIG.  
1, item 2 and col. 3, lines 12-20). It would have been obvious  
at the time the invention was made to employ the yoke and magnet  
design of Oudet et al. in the apparatus of Striker. One having  
18 ordinary skill in the art would have been motivated to do so to  
securely hold the magnets in close relation, while allowing  
rotation, to the stator assembly to direct symmetrical lines of  
flux therethrough (See col. 4, lines 27-57) and to prevent  
outside magnetic fields from interfering with the magnetic  
fields within the assembly (See col. 1, lines 55-60).

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Claims 11 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Striker in view of Herden et al. (US 6,232,771). Regarding these claims, Striker teaches the limitations of claims 8 and 15 (Note discussion above), except that Striker does not teach a tubular yoke surrounding the rotor and stator assemblies. Herden et al. teaches such a tubular yoke surrounding an arcuately shape magnet (See Herden et al. FIG. 1, item 11). It would have been obvious at the time the invention was made to employ the outer yoke surrounding a rotor with at least one arcuate magnet thereon as taught by Herden et al. in the angular position sensor of Striker. One having ordinary skill in the art would have been motivated to do so to guide the magnetic flux along a circuit within the assembly (See FIGS. 2a and 2b), to position the magnets adjacent the stator assembly for rotation thereto (See FIG. 6) and to prevent spurious magnetic fields from interfering with the sensor assembly.

### *Response to Arguments*

Applicant's arguments filed July 14, 2005 have been fully considered but they are not persuasive. The only argument for patentability asserted by Applicant is that Striker does not

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show the second angular location for the second sensor as recited in the claims wherein the magnetic field at such location or through the sensor is generally constant.

However, Striker does disclose such features as outlined above in the rejection. It is initially noted that the device shown in FIG. 1 of Striker is analogous to the Applicant's embodiment shown in FIGS. 2a-c and discussed at pages 11-12 of the present specification. Each has a pair of magnets mounted about a stator core made of ferromagnetic material (Striker FIG. 1, item 30 and present appl. FIG. 2a, item 16), and a first sensor located in the core in line with the magnetic field (Striker FIG. 1, item 1 and present appl. FIG. 2a, item 18) and a second magnetic sensor located in the core crossing the magnetic field (Striker FIG. 1, item 5 and present appl. FIG. 2a, item 22). Applicant's rotary position sensor is designed to move through small rotations, i.e., between -15 and 15 degrees (See present application at page 3, paragraph 0009). During such small rotations of Applicant's embodiment, the sensor would experience largely changing fields while the sensor would experience an essentially constant field, within a few gauss (See FIGS. 2a-c and present specification, pages 11-12, paragraphs 0046-0048). Because Striker has the structure recited in the claims and the structure is further analogous to

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that illustrated by Applicant in present specification, the sensor in position 5 would similarly experience an essentially constant field, within a few gauss. Accordingly, Striker discloses explicitly and necessarily the features of the claims for such small rotations.

6           Regarding Applicant's statement that the apparatus of  
· Striker varies largely between 0 and 45 degrees, it is noted for  
rotations between -15 and 15 degrees, Striker discloses the  
claimed invention as noted above. Furthermore, rotations to 45  
degrees are neither contemplated by Applicant's invention nor  
claimed. Therefor such arguments with respect to such movements  
12 are not relevant.

#### ***Allowable Subject Matter***

Claims 2, 12, 16 and 17 are objected to as being dependent  
upon a rejected base claim, but would be allowable if rewritten  
in independent form including all of the limitations of the base  
18 claim and any intervening claims.

The reasons for the indication of allowable subject matter  
are those stated in the Office Action mailed April 12, 2005.



*Conclusion*

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this  
6 action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated  
12 from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kenneth J. Whittington whose telephone number is (571) 272-2264. The  
18 examiner can normally be reached on Monday-Friday, 7:30am-4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Lefkowitz can be reached on (571) 272-2180. The fax phone number for the

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organization where this application or proceeding is assigned is  
703-872-9306.

Information regarding the status of an application may be  
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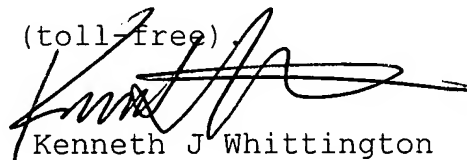
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access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free).



Kenneth J. Whittington  
Examiner  
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kjw